

Descriptions of three new *Platypalpus* Macquart from Guangdong, China (Diptera, Hybotidae, Tachydromiinae)

Ding YANG^{1,2}, Bernhard MERZ³ & Patrick GROOTAERT⁴

¹ Department of Entomology, China Agricultural University, Beijing 100094, China.

E-mail: dingyang@cau.edu.cn

² Key Lab of Insect Evolution & Environmental Changes, Capital Normal University, Beijing 100037, China.

³ Département d'Entomologie, Muséum d'histoire naturelle, C. P. 6434, CH-1211 Genève 6, Switzerland.

E-mail: bernhard.merz@ville-ge.ch

⁴ Department of Entomology, Royal Belgian Institute of Natural Sciences, Vautierstraat 29, 1000 Brussels, Belgium.

E-mail: Patrick.Grootaert@naturalsciences.be

Descriptions of three new *Platypalpus* Macquart from Guangdong, China (Diptera, Hybotidae, Tachydromiinae). - *Platypalpus* Macquart is recorded for the first time from Guangdong province. Three new species are described as new to science: *P. convergens* sp. n., *P. guangdongensis* sp. n., *P. zhangae* sp. n. A key to the species of the genus from Guangdong is presented.

Keywords: Hybotidae - Tachydromiinae - *Platypalpus* - Guangdong - new species.

INTRODUCTION

The genus *Platypalpus* Macquart belongs to the subfamily Tachydromiinae of the family Hybotidae. It is easily identified by the following combination of characters: eyes narrowly separated on frons and face, mid leg raptorial, and anal cell present (Chvála, 1975; Grootaert & Chvála, 1992). The genus is distributed worldwide. Most species have been recorded from the Palaearctic realm, particularly from Europe where some 250 species are known (Chvála & Kovalev, 1989; Grootaert & Chvála, 1992). Smith (1975) reported 31 species from the Oriental Region. However since then, 28 species have been added to the fauna of China alone by Yang & Merz (2005), Yang, D. & Yang, C. (1989, 1990, 1992, 1997), Yang, C. & Yang, D. (1992), Saigusa & Yang (2002), and Yang, An & Gao (2002). So far 36 species are known to occur in China. The major reference dealing with *Platypalpus* are as following: Brunetti (1920), Frey (1943), Smith (1965), Chvála (1975, 1989), Grootaert (1984), and Grootaert & Chvála (1992).

Guangdong with a tropical or subtropical climate belongs to the South China Region of the Oriental realm north of Hongkong. The genus *Platypalpus* is here recorded for the first time from Guangdong. Three new species are described and illustrated. In addition two unnamed species, known from females alone, were found during the sampling campaign of Yang & Grootaert in 2003 in Guangdong. More species are expected to occur in this province since the sampling was done in the beginning of the flight period of *Platypalpus*. A key to the three described species from Guangdong is presented.

MATERIAL AND METHODS

The specimens were collected at the end of May by Yang, Zhang & Grootaert respectively. The type material is deposited in the following collections:

CAU Entomological Museum of the China Agricultural University, Beijing, China

MHNG Muséum d'histoire naturelle, Genève, Switzerland

RBINS Royal Belgian Institute of Natural Sciences, Brussels, Belgium

In order to allow an easy comparison with descriptions of various authors, the morphological terminology follows generally Grootaert & Chvála (1992), except for crossveins which are written in capitals. Terminology of antenna follow Stuckenberg (1999).

The following abbreviations for bristles are used: acr-acrostichial, ad-anterodorsal, av-anterovenral, dc-dorsocentral, h-humeral, oc-ocellar, npl-notopleural, pd-posterodorsal, presc – prescutellar, psa-postalar, pv-posterovenral, sa-supraalar scutellar, vt-vertical.

TAXONOMIC PART

KEY TO THE DESCRIBED SPECIES OF *PLATYPALPUS* FROM GUANGDONG

The following key should help to separate quickly the three new species. Because of insufficient knowledge of the *Platypalpus* fauna of China a large number of additional species may be expected to occur in this province.

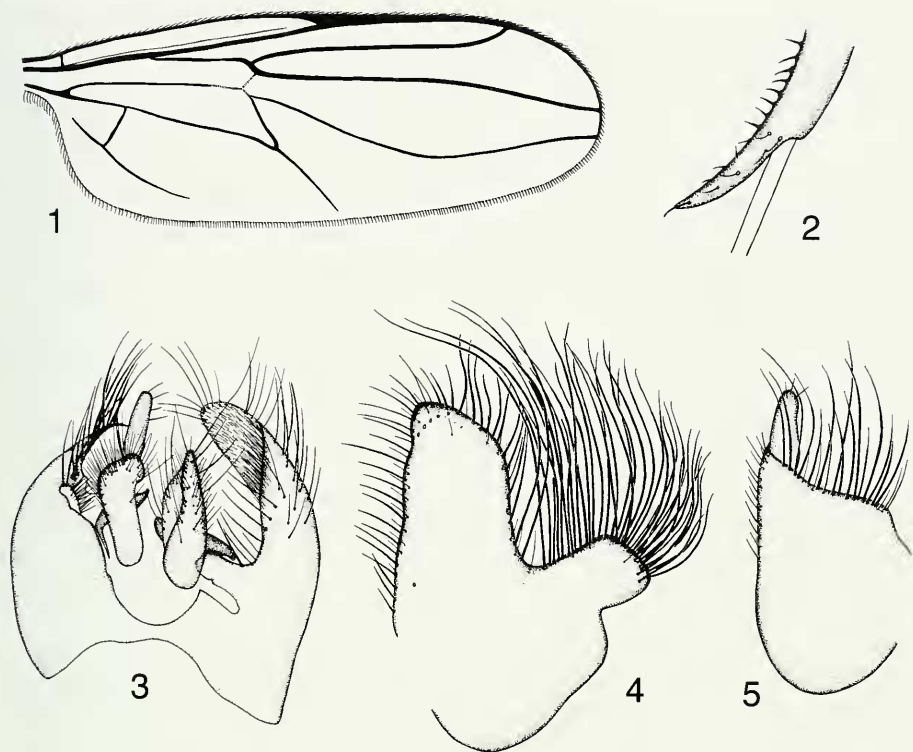
- 1 Thorax black 2
- Thorax yellow *guangdongensis* sp. n.
- 2 R₄₊₅ and M parallel apically; arista as long as postpedicel *zhangae* sp. n.
- R₄₊₅ and M convergent apically; arista much longer than postpedicel *convergens* sp. n.

Platypalpus convergens sp. n.

Figs 1-5

MATERIAL: Holotype ♂, CHINA: Guangdong: Ruyuan, Nanling National Nature Reserve, (23.20N/115.23E), Shumuyuan, 500 m, 26. III. 2003, leg. L. Zhang (CAU). Paratypes: 1 ♂ 12 ♀♀, same data as holotype (CAU & MNHG). 2 ♂♂, 7 ♀♀, forest near entrance of the Nanling National Nature Reserve, 26.III.2003, leg. P. Grootaert (sample 23008, RBINS). The type locality is a forest situated about 40 km north of Ruyuan (24.44N/113.18E).

ETYMOLOGY: The specific name refers to R₄₊₅ and M which are convergent apically.



FIGS 1-5

Platypalpus convergens sp. n, male. 1, wing; 2, tip of mid tibia; 3, genitalia, dorsal view; 4, left epiandrial lamella; 5, right epiandrial lamella.

DIAGNOSIS: Mainly grey-microtrichose species; postpedicel yellow, 2.8 times as long as wide, arista over twice as long; 1 pair of vt; hairs on mesonotum very short and sparse; mid femur with a row of rather short pv; fore tibia thickened with shorter dorsal and very long, dense black ventral bristles in apical half; mid tibia with very long apical spur (Fig. 2); fore basitarsus with long posterior and pv bristles; R_{4+5} and M convergent apically (Fig. 1).

DESCRIPTION:

Male. Body length 3.9-4.3 mm, wing length 4.8-4.9 mm.

Head black, grey microtrichose. Eyes narrowly separated on face; frons wider than face, parallel-sided, as wide as pedicel. Postoculars hairs black above, very long and whitish below. Ocellar tubercle with 1 pair of short oc and 2 minute posterior hairs; 1 pair of short vt close together. Antenna with scape and basal half of pedicel dark brown, remainder yellow; arista dark brown; pedicel with a circle of black apical hairs; postpedicel long conical, 2.8 times as long as wide, with black hairs except base bare;

arista rather long, 2.6 times as long as postpedicel, short black pubescent. Proboscis almost as long as height of head, dark brown with blackish hairs; clypeus grey microtrichose; palpus yellow with 4 pale hairs.

Thorax black grey microtrichose. Pleura microtrichose but sternopleura with a large polished patch in middle. Hairs on thorax pale, bristles black; hairs on mesonotum very short and sparse; humeri well developed with several very short pale hairs, but without strong h; 1 npl (anterior npl absent), acr biseriata, dc as long as acr, biserial anteriorly and uniserial in posterior half, 1 psa, 1 distinct presc in front of scutellum; scutellum with 2 pairs of sc, basal pair as long as 2/5 of apical pair.

Legs mainly yellow, including all coxae; fore femur basally with blackish antero-ventral spot; mid femur with a blackish antero-ventral stripe in basal half and with a brown spot ventrally near apex; fore tibia brown especially anteriorly and ventrally, posteriorly dark yellow. Mid tibia anteriorly and ventrally dark brown; apex of hind tibia dark brown; fore tarsomeres 1 and 5, mid and hind tarsomeres 3-5 dark brown. Hairs and bristles on legs black except for white av bristles on fore femur. Fore femur 1.8 times and mid femur 2.3 times as wide as hind femur; fore femur with a row of long av and a row of pv bristles (4 additional hairs forming a second outer row in the basal quarter); mid femur with two rows of short black spinules ventrally (longer in basal quarter) and one row of about 10 black pv bristles, which are half as long as femur is deep. Fore tibia distinctly thickened, with shorter dorsal bristles which are about as long as tibia is thick, and very long ventral bristles on apical two thirds; anteriorly almost along entire length covered with dense, golden hairs; mid tibia with a row of short weak black ventral hairs, and with a very long, pointed apical spur bearing an apical hair (Fig. 2). Fore basitarsus with rows of long, black posterior and pv bristles.

Wing hyaline; veins dark brown, R_{4+5} and M distinctly convergent apically (Fig. 1). Basal cells equally long. Anal vein distinct. Vein closing anal cell slightly S-shaped. Squama dark yellow with pale hairs. Halter yellow.

Abdomen subshining black, thinly grey microtrichose; hypopygium black. Hairs on abdomen short, pale. Male genitalia (Figs 3-5): Left epandrial lamella rather wide basally with distinct lateral process bearing very long marginal bristles; right epandrial lamella short with an apical row of long bristles, its apical projection (surstylus) short and finger-like; left cercus somewhat acute apically; right cercus short, obtuse apically.

Female. Body length 3.2-5.0 mm, wing length 4.4-4.5 mm. Similar to male, but legs almost entirely yellow without brown areas, fore tibia weakly thickened, without the very long black ventral hairs on tip, but being still longer haired than usual in *Platypalpus*.

DISTRIBUTION: China (Guangdong).

REMARKS: The new species is very peculiar. It is easily separated from other known species of the genus occurring in China by the fore tibia distinctly thickened with conspicuous dorsal and very long ventral bristles, and the long setulose fore basitarsus. *P. convergens* belongs to the *P. pallidiventris-cursitans* species-group of Chvála (1989).

Platypalpus guangdongensis sp. n.

Figs 6-9

MATERIAL: Holotype ♂, CHINA: Guangdong: Yingde, Shimentai National Forest Park, 28. III. 2003, leg. D. Yang (CAU). Paratype: 1 ♀, same data as holotype (CAU). The type locality is a forest situated 15 km north of Yingde (24.09N/113.25E).

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: Mainly yellow species with black head, scutellum and mediotergite (postnotum); mesonotum subshiny; 2 pairs of vt; antenna yellow; postpedicel short oval; mid femur without posteroventral bristles; mid tibia with a long apical spur ventrally (Fig. 6).

DESCRIPTION:

Male. Body length 2.5 mm, wing length 4.0 mm.

Head black, grey microtrichose. Eyes narrowly separated on face; face narrower than frons. Hairs and bristles on head pale. Ocellar tubercle with 1 pair of oc and 4 very short posterior hairs; 2 vt. Antenna yellow; scape without dorsal bristles; pedicel with a circle of pale apical hairs; postpedicel short oval, 1.1 times as long as wide, with some apical hairs; arista very long, 3.9 times as long as postpedicel, blackish, short pubescent. Proboscis almost as long as height of head, brownish yellow with brown hairs; palpus yellow with 3 long pale hairs.

Thorax yellow, thinly grey microtrichose; mesonotum subshining; scutellum black, mediotergite (postnotum) blackish; polished spot on sternopleuron absent. Hairs on thorax pale, bristles brownish yellow; 1 short hair-like h curved inwards, 2 npl (anterior npl short and hair-like), acr 4-seriate, dc pale, as long as acr, 1 long psa, 1 short weak presc in front of scutellum, scutellum with 2 pairs of sc (basal pair very short, one third as long as apical pair).

Legs yellow, but tarsomere 5 of all legs brown. Hairs on legs pale. Fore femur 1.2 times and mid femur 1.8 times as wide as hind femur; mid femur with two rows of short black ventral spinules (av very short, pv slightly longer than av bristles, but ventral bristles on basal 1/4 long and brownish yellow), without row of strong pv bristles; mid tibia with a row of blackish ventral bristles and finger-like apical spur (Fig. 6).

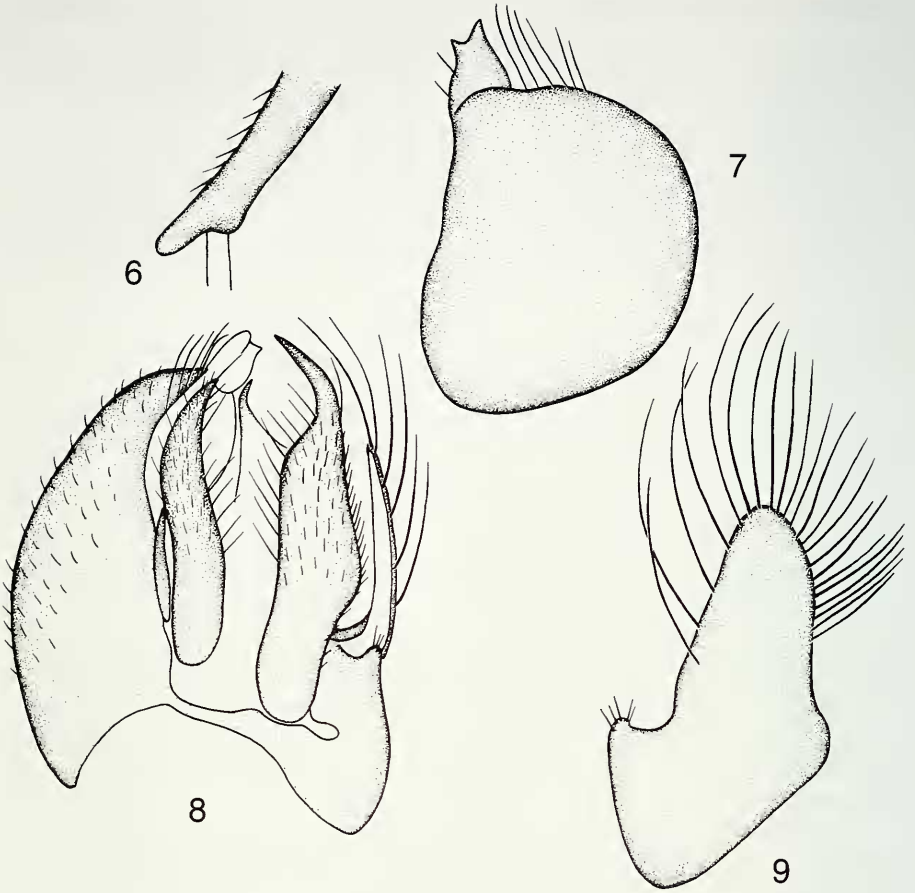
Wing hyaline; veins brownish yellow, R₄₊₅ and M parallel apically. Basal cells equal, crossveins contiguous. Squama yellow with pale hairs. Halter yellow.

Abdomen brownish yellow, pale grey microtrichose; sternites dark yellow, hypopygium brownish. Hairs on abdomen pale. Male genitalia (Figs 7-9): Left epandrial lamella rather narrow in dorsal view, its apical projection (surstylus) large and subtriangular with long apical bristles; right epandrial lamella slightly widening dorsally, its apical projection (surstylus) rather small truncate apically; left cercus rather long, spine-like apically; right cercus short with acute apex.

Female. Body length 2.0 mm, wing length 2.8 mm. Similar to male, but abdomen entirely dark yellow.

DISTRIBUTION: China (Guangdong).

REMARKS: The new species is very similar to *Platypalpus guangxiensis* Yang & Yang from Guangxi, Sichuan and Hubei, but can be separated from the latter by the



FIGS 6-9

Platypalus guangdongensis sp. n. male. 6, tip of mid tibia; 7, right epandrial lamella; 8, genitalia, dorsal view; 9, left epandrial lamella.

blackish mediotergite and short thick apical projection of the right epandrial lamella. In *P. guangxiensis*, the mediotergite is yellow, and the apical projection of the right epandrial lamella is long and spine-like (Yang & Yang, 1992). The unusual combination of characters does not allow to place this species in one of the species-groups defined by Chvála (1989).

***Platypalus zhangae* sp. n.**

Figs 10-13

MATERIAL: Holotype ♂, CHINA: Guangdong: Ruyuan, Nanling National Nature Reserve, (23.20N/115.23E), Shumuyuan, 500 m, 26. III. 2003, leg. Lili Zhang (CAU). Paratype: 1 ♂. Guangdong, Ruyuan, forest near entrance of the Nanling National Nature Reserve, 26.III.2003, leg. P. Grootaert (sample 23008, RBINS). The type locality is a forest situated about 40 km north of Ruyuan (24.44N/113.18E).

ETYMOLOGY: The species is named after the collector of the holotype.

DIAGNOSIS: Mainly black species with shining black mesonotum; 1 pair of vt; postpedicel much elongated, 3.8 times longer than wide; arista rather short, at most as long as postpedicel (Fig. 10); costa with a black stigma; mid femur without pv bristles; mid tibia black without apical spur.

DESCRIPTION:

Male. Body length 3.0 mm, wing length 3.2 mm.

Head black, grey microtrichose. Eyes narrowly separated on face; frons wider than face. Hairs on head pale, bristles brownish yellow. Ocellar tubercle with 1 pair of oc and 4 posterior hairs slightly shorter than oc; 1 pair of short vt. Antenna (Fig. 10) blackish with black scape; pedicel with a circle of black apical hairs; postpedicel long conical, 3.8 times longer than wide, with blackish hairs except base bare; arista rather short, as long as postpedicel, blackish, short pubescent. Proboscis almost as long as height of head, dark brown with blackish hairs; palpus rather large, ovoid, yellow with 3 minute blackish hairs.

Thorax black, but humeri and prothorax paler (at least in alcohol preserved specimens); mesonotum polished, sparsely haired but laterally with dense hairs; pleuron subshiny, polished spot on sternopleuron not discernible. Hairs on thorax pale, bristles brownish yellow; humerus with 6 hairs including 1 rather long hair-like h curved inward; 1 npl (anterior npl absent), acr rather long, biseriate, diverging, dc uniseriate and shorter than acr, 1 psa, 1 short presc in front of scutellum; scutellum very short densely pubescent, with 2 pairs of sc, basal pair 2/3 as long as apical pair.

Legs dark brownish yellow; all coxae and trochanters yellow; mid tibia black, hind tibia dark brown; tarsomere 5 dark brown. Hairs and bristles on legs pale. Fore femur 1.2 times and mid femur 1.4 times as wide as hind femur; fore femur with a row of av and a row of short pv bristles, which are as long as femur is wide; mid femur with two rows of black ventral spinules (av short and pv rather long), but without row of strong pv bristles; mid tibia with a row of short black ventral bristles, and without apical spur.

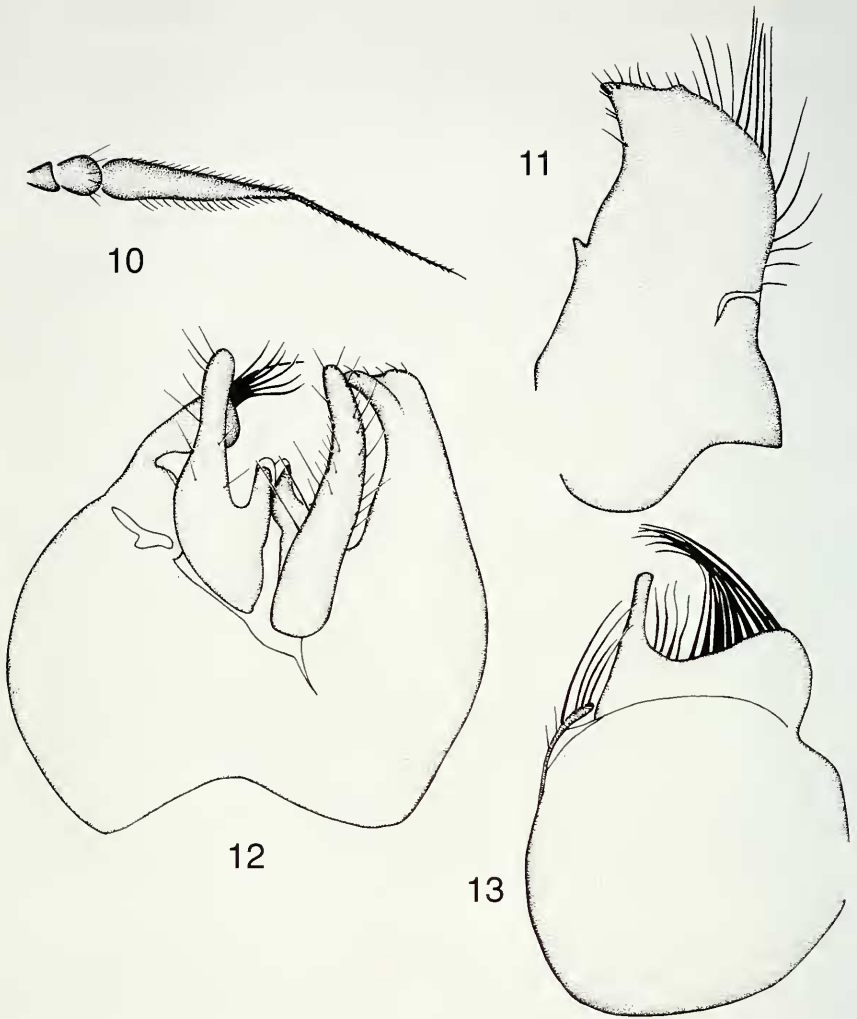
Wing nearly hyaline; veins dark brown, C with a black stigma; R_{4+5} and M parallel apically. Basal cells equally long. Vein closing anal cell recurrent (brown on basal half, tip indistinct). Anal vein weakly indicated. Anal lobe of wing narrow. Squama yellow with pale hairs. Halter pale yellow.

Abdomen blackish, grey microtrichose; hypopygium black. Hairs on abdomen pale, dense, long at sides. Male genitalia (Figs 11-13): Left and right epandrial lamellae rather broadly fused basally (best seen in dorsal view); left epandrial lamella rather narrow in dorsal view, its apical projection (surstylus) rather large and not distinctly separated from basal plate; right epandrial lamella rather wide in dorsal view, its apical projection (surstylus) short and wide with a finger-like apico-lateral process; left and right cerci basally with a medial process and apically finger-like.

Female. Unknown.

DISTRIBUTION: China (Guangdong).

REMARKS: The new species is somewhat similar to *Platypalpus pallipilosus* Saigusa & Yang from Henan, but can be separated from the latter by the long post-



FIGS 10-13

Platypalpus zhangae sp. n. male. 10, antenna; 11, left epandrial lamella; 12, genitalia, dorsal view; 13, right epandrial lamella.

pedicel (3.8 times longer than wide) with the rather short arista (as long as the postpedicel). In *P. pallipilosus*, the postpedicel is shorter (2.1 times longer than wide) with a longer arista (1.9 times longer than the postpedicel). Judging from the wing structure, the shining mesonotum, the rather thin mid femur and the long antenna *P. zhangae* belongs to the *P. longicornis* species-group. However, instead of two pairs of vertical bristles usually present in this species-group there is only one pair developed in the new species.

CONCLUSIONS

Guangdong belongs to the South China region of the Oriental realm with a subtropical and tropical climate. *Platypalpus* is apparently a more temperate genus which is less well represented in hot, tropical parts of the world. Therefore it is not surprising that up to now only 5 species of *Platypalpus* are known to occur in Guangdong, three of which are described in this paper and two remain unnamed. Nevertheless, taking into account the insufficient collecting effort, the rather early collecting time and the difficulties to find suitable habitats, it is highly possible that more species will eventually be found in this province of China.

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